

## CLAIMS

1        1. A composition, comprising:  
2            a catalyst; and  
3            a non-electrolytic material different than the catalyst,  
4            wherein the catalyst and the non- electrolytic material compose a fuel cell electrode.

1        2. The composition of claim 1, wherein the catalyst is capable of catalyzing  
2            oxidation of a fuel cell gas.

1        3. The composition of claim 2, wherein the fuel cell gas comprises hydrogen.

1        4. The composition of claim 1, wherein the catalyst is capable of undergoing  
2            reversible oxide formation.

1        5. The composition of claim 1, wherein the catalyst is selected from a group  
2            consisting of platinum, ruthenium, iridium, rhodium, palladium, molybdenum and alloys  
3            thereof.

1        6. The composition of claim 1, wherein the composition comprises between about  
2            5 percent to about 40 percent of the catalyst.

1        7. The composition of claim 1, wherein the composition comprises less than about  
2            30 percent of non-electrolytic material by weight.

1        8. The composition of claim 1, wherein the non-electrolytic material comprises a  
2            fluorine-containing resin.

1        9. The composition of claim 1, wherein the non-electrolytic material comprises a  
2            copolymer of tetrafluoroethylene and hexafluoropropylene.

1        10. The composition of claim 1, wherein the non- electrolytic material comprises  
2            polytetrafluoroethylene.

1        11. The composition of claim 1, further comprising:

2              a first material resistant to oxidation up to about 3.0 Volts vs. SHE.

1        12. The composition of claim 11, wherein the catalyst is distributed on the first

2 material.

1        13. The composition of claim 11, wherein the catalyst is distributed on the first

2 material with a load between about 5 percent and about 95 percent.

1        14. The composition of claim 11, wherein the first material comprises an oxide.

1        15. The composition of claim 11, wherein the first material is selected from a group

2 consisting of tungsten oxide, zirconium oxide, niobium oxide, and tantalum oxide.

1        16. A composition, comprising:

2              a catalyst; and

3              a first material resistant to oxidation up to about 3.0 Volts vs. SHE,

4              wherein the catalyst and the first material compose a fuel cell electrode.

1        17. The composition of claim 16, wherein the catalyst is distributed on the first

2 material.

1        18. The composition of claim 16, wherein the catalyst is distributed on the first

2 material with a load between about 5 percent and about 95 percent.

1        19. The composition of claim 16, wherein the first material comprises an oxide.

1        20. The composition of claim 16, wherein the first material is selected from a group

2 consisting of tungsten oxide, zirconium oxide, niobium oxide, and tantalum oxide.

1        21. A composition, comprising:

2              a catalyst capable of catalyzing oxidation of a fuel cell gas;

3              a first material resistant to oxidation up to about 3.0 Volts vs. SHE; and

4           a non- electrolytic material,  
5           wherein the catalyst, the first material, and the non-electrolytic material compose a  
6 fuel cell electrode.

1           22. The composition of claim 21, wherein the catalyst comprises platinum.

1           23. The composition of claim 21, wherein the first material comprises an oxide.

1           24. The composition of claim 21, wherein the non- electrolytic material comprises  
2 polytetrafluoroethylene.